

What is claimed is:

1. A pharmaceutical composition comprising;
 - (a) 5-60% by weight on a dry weight basis of a DPP-IV inhibitor in free form or in acid addition salt form;
 - (b) 40-95% by weight on a dry weight basis of a pharmaceutically acceptable diluent;
 - (c) 0-20% by weight on a dry weight basis of a pharmaceutically acceptable disintegrant; and optionally
 - (d) 0.1-10% by weight on a dry weight basis of a pharmaceutically acceptable lubricant.
2. A composition according to claim 1 comprising;
 - (a) 20-40% preferably 20-35% by weight on a dry weight basis of a DPP-IV inhibitor in free form or in acid addition salt form;
 - (b) 40-95% by weight on a dry weight basis of a pharmaceutically acceptable diluent;
 - (c) 0-10% by weight on a dry weight basis of a pharmaceutically acceptable disintegrant; and optionally
 - (d) 0.25-6% by weight on a dry weight basis of a pharmaceutically acceptable lubricant.
3. A composition according to claim 1 or claim 2, comprising;
 - (a) 20-35% by weight on a dry weight basis of a DPP-IV inhibitor in free form or in acid addition salt form;
 - (b) 62-78% by weight on a dry weight basis of a pharmaceutically acceptable diluent;
 - (c) 0-10% by weight on a dry weight basis of a pharmaceutically acceptable disintegrant; and optionally
 - (d) 0.1-10% by weight on a dry weight basis of a pharmaceutically acceptable lubricant.
4. A composition according to any one of claims 1 to 3 comprising;

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- (a) 22-28% by weight on a dry weight basis of a DPP-IV inhibitor in free form or in acid addition salt form.
5. A composition according to any one of claims 1 to 2 comprising;
- (a) 30-35 % by weight on a dry weight basis of a DPP-IV inhibitor in free form or in acid addition salt form, and
- (b) 58-72% by weight on a dry weight basis of a pharmaceutically acceptable diluent;
6. A composition according to any one of claims 1 to 5 comprising;
- i) one or two diluents selected from microcrystalline cellulose and lactose
- ii) the two diluents microcrystalline cellulose and lactose,
- iii) 25-70% preferably 35-55% by weight on a dry weight basis of a pharmaceutically acceptable microcrystalline cellulose, or
- iv) 25-70% preferably 35-55% by weight on a dry weight basis of a pharmaceutically acceptable microcrystalline cellulose and 5-40% preferably 18-35% by weight on a dry weight basis of lactose.
7. A composition according to any one of claims 1 to 6 comprising;
- (c) 1-6% by weight on a dry weight basis of a pharmaceutically acceptable disintegrant, and/or (d) 0.1-10% by weight on a dry weight basis of a pharmaceutically acceptable lubricant.;
8. A composition according to any one of claims 1 to 5 comprising;
- (a) 20-35% by weight on a dry weight basis of DPP-IV inhibitor;
- (b) 25-70% by weight on a dry weight basis of a pharmaceutically acceptable microcrystalline cellulose;
- (c) 5-40% by weight on a dry weight basis of a pharmaceutically acceptable lactose;
- (d) 0-10% by weight on a dry weight basis of a pharmaceutically acceptable sodium starch glycolate;
- (e) 0.25-6% by weight on a dry weight basis of magnesium stearate.
9. A composition according to any one of claims 1 to 5 comprising;

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- (a) 25-35% by weight on a dry weight basis of a DPP-IV inhibitor in free form or in acid addition salt form;
 - (b) 25-70% by weight on a dry weight basis of a pharmaceutically acceptable microcrystalline cellulose;
 - (c) 5-40% by weight on a dry weight basis of a pharmaceutically acceptable lactose;
 - (d) 0-10% by weight on a dry weight basis of a pharmaceutically acceptable sodium starch glycolate;
 - (e) 0.25-6% by weight on a dry weight basis of magnesium stearate.
10. A composition according to any one of claims 1 to 5 comprising;
- (a) 30-35% preferably 30-32% by weight on a dry weight basis of DPP-IV inhibitor e.g. LAF237;
 - (b) 35-50% preferably 40-45% by weight on a dry weight basis of a pharmaceutically acceptable microcrystalline cellulose;
 - (c) 18-35% preferably 20-25% by weight on a dry weight basis of a pharmaceutically acceptable lactose;
 - (d) 1-4% preferably 1.5-2.5% by weight on a dry weight basis of a pharmaceutically acceptable sodium starch glycolate; and
 - (e) 0.5-4% preferably 0.1-2% by weight on a dry weight basis of magnesium stearate.
11. A composition according to any one of claims 1 to 5 comprising;
- (a) 20-35% preferably 22-28% by weight on a dry weight basis of DPP-IV inhibitor e.g. LAF237;
 - (b) 35-55% by weight on a dry weight basis of a pharmaceutically acceptable microcrystalline cellulose;
 - (c) 18-35% by weight on a dry weight basis of a pharmaceutically acceptable lactose;
 - (d) 1-4% by weight on a dry weight basis of a pharmaceutically acceptable sodium starch glycolate; and

- (e) 0.5-4% by weight on a dry weight basis of magnesium stearate.
12. A composition according to any one of claims 1 to 5 comprising;
- (a) from about 22% to about 28% by weight on a dry weight basis of a DPP-IV inhibitor or a DPP-IV inhibitor of formula (I);
 - (b) from about 45% to about 50% by weight on a dry weight basis of a pharmaceutically acceptable microcrystalline cellulose;
 - (c) from about 20% to about 25% by weight on a dry weight basis of a pharmaceutically acceptable lactose;
 - (d) from about 1.5% to about 2.5% by weight on a dry weight basis of a pharmaceutically acceptable sodium starch glycolate; and
 - (e) from about 0.1% to about 2% by weight on a dry weight basis of magnesium stearate.
13. A composition according to any one of claims 1 to 12, wherein the DPP-IV inhibitor is selected from 1-{2-[(5-cyanopyridin-2-yl) amino] ethylamino} acetyl-2 (S)- cyano-pyrrolidine dihydrochloride, (S)-1-[(3-hydroxy-1-adamantyl)amino]acetyl-2-cyano-pyrrolidine, L-threo-isoleucyl thiazolidine, MK-0431, GSK23A, BMS-477118, 3-(aminomethyl)-2-isobuthyl-1-oxo-4-phenyl-1,2-dihydro-6-isoquinolinecarboxamide and 2-[[3-(aminomethyl)-2-isobuthyl-4-phenyl-1-oxo-1,2-dihydro-6-isoquinolyl]oxy}acetamide and optionally in any case pharmaceutical salts thereof.
14. A composition according to any one of claims 1 to 12, wherein the DPP-IV inhibitor is 1-[3-hydroxy-adamant-1-ylamino)-acetyl]-pyrrolidine-2(S)-carbonitrile or a pharmaceutical salt thereof.
15. A compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet, wherein the dispersion contains particles comprising a DPP-IV inhibitor, in free form or in acid addition salt form, and wherein at least 60% of the particle size distribution in the tablet is less than 250 μm .
16. A compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet wherein the dispersion contains particles comprising DPP-IV inhibitor, in free form or in acid

addition salt form, and wherein tablet thickness to tablet weight ratios is of 0.002 to 0.06 mm/mg preferably of 0.01 to 0.03 mm/mg.

17. A compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet wherein the dispersion contains particles comprising DPP-IV inhibitor, in free form or in acid addition salt form, and wherein;

- i) at least 60% of the particle size distribution in the tablet is less than 250 μm preferably between 10 to 250 μm , and
- ii) tablet thickness to tablet weight ratios is of 0.002 to 0.06 mm/mg or of 0.01 to 0.03 mm/mg

18. A compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet wherein the dispersion contains particles comprising DPP-IV inhibitor preferably LAF237, in free form or in acid addition salt form, and wherein;

- i) at least 60% of the particle size distribution in the tablet is less than 250 μm preferably between 10 to 250 μm ,
- ii) the water content of the tablet is less than 10% after 1 week at 25°C and 60% RH, and
- iii) tablet thickness to tablet weight ratios is of 0.002 to 0.06 mm/mg.

19. A compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet according to any one of claims 15 to 18, wherein the particle size distribution in the tablet is between 50 to 150 μm .

20. A compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet according to any one of claims 15 to 19, wherein the water content of the tablet is less than 5% after 1 week at 25°C and 60% RH

21. A compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet according to any one of claims 15 to 20, wherein tablet thickness to tablet weight ratios is of 0.01 to 0.03 mm/mg

22. A compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet according to any one of claims 15 to 21, wherein at least 60% or at least 80% of the particle size distribution in the tablet is between 10 to 250 μm .

23. A compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet according to any one of claims 15 to 21, wherein at least 25% or at least 35% of the particle size distribution in the tablet is between 50 to 150 μm .

24. A compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet according to any one of claims 15 to 23 wherein the tablet comprises a composition according to any one of claims 1 to 14.

25. A compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet according to any one of claims 15 to 24, wherein

- i) between 0 and 10 minutes 85 to 99.5 % of the active ingredient is released, and
- ii) between 10 and 15 minutes 90 to 99.5 % of the active ingredient is released.

26. A compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet according to any one of claims 15 to 24, wherein the particle size distribution of the pharmaceutical excipients in the tablet is between 5 and 400 μm .

27. The compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet according to any one of claims 15 to 26, in which the DPP-IV inhibitor is selected from 1-{2-[(5-cyanopyridin-2-yl) amino] ethylamino} acetyl-2 (S)- cyano-pyrrolidine dihydrochloride, (S)-1-[(3-hydroxy-1-adamantyl)amino]acetyl-2-cyano-pyrrolidine, L-threo-isoleucyl thiazolidine, MK-0431, GSK23A, BMS-477118, 3-(aminomethyl)-2-isobuthyl-1-oxo-4-phenyl-1,2-dihydro-6-isoquinolinecarboxamide and 2-[[3-(aminomethyl)-2-isobuthyl-4-phenyl-1-oxo-1,2-dihydro-6-isoquinolyl]oxy}acetamide and optionally in any case pharmaceutical salts thereof.

28. The compressed pharmaceutical tablet or a direct compressed pharmaceutical tablet according to any one of claims 15 to 26, in which the DPP-IV inhibitor is *N*-(substituted glycy)-2-cyanopyrrolidine is 1-[3-hydroxy-adamant-1-ylamino)-acetyl]-pyrrolidine-2(S)-carbonitrile or a pharmaceutical salts thereof.

29. A compressed pharmaceutical tablet according to any one of claims 15 to 28, which is a direct compressed tablet.

30. A solid dosage form of the composition according to any one of Claims 1 to 14.
31. The solid dosage form of Claim 30 which is a tablet.
32. The solid dosage form of Claim 30 which is a capsule.
33. A solid dosage form of the composition according to any one of Claims 1 to 14 which is a compressed tablet preferably a direct compressed tablet.
34. Process for preparing a direct compressed tablet according to any one of claims 15 to 29, in unit dosage form, which comprises:
- (a) blending as a % by weight on a dry weight basis:
- (i) 6-60% by weight on a dry weight basis of DPP-IV inhibitor e.g. LAF237; and
 - (ii) and at least one excipient selected from a diluent, a disintegrant and a lubricant,
- to form a DPP-IV inhibitor formulation in the form of a tableting powder, capable of being directly compressed into a tablet; and
- (b) compressing the formulation prepared during step (a) to form the compressed DPP-IV inhibitor tablet in unit dosage form.
35. Process for preparing a direct compressed tablet according to any one of claims 15 to 29, in unit dosage form, which comprises:
- (a) blending as a % by weight on a dry weight basis:
- (i) 25-35% by weight on a dry weight basis of DPP-IV inhibitor e.g. LAF237;
 - (ii) 40-95% by weight on a dry weight basis of a pharmaceutically acceptable diluent;
 - (iii) 0-10% by weight on a dry weight basis of a pharmaceutically acceptable disintegrant; and
 - (iv) 0.25-6% by weight on a dry weight basis of a pharmaceutically acceptable lubricant,
- to form a DPP-IV inhibitor formulation in the form of a tableting powder, capable of being directly compressed into a tablet; and

(b) compressing the formulation prepared during step (a) to form the compressed DPP-IV inhibitor tablet in unit dosage form.

36. Process according to claim 35 wherein the blended formulation comprises:

- (i) 20-35% or preferably 25-30% by weight by weight on a dry weight basis of DPP-IV inhibitor preferably LAF237, in free form or in acid addition salt form;
- (ii) 25-70% by weight or preferably 35-50% by weight on a dry weight basis of a pharmaceutically acceptable microcrystalline cellulose such as Avicel PH 102;
- (iii) 5-40% by weight or preferably 18-35% by weight on a dry weight basis of a pharmaceutically acceptable lactose;
- (iv) 0-10% by weight or preferably 1-4% by weight on a dry weight basis of a pharmaceutically acceptable sodium starch glycolate; and
- (v) 0.25- 6% by weight or preferably 0.5-4% by weight on a dry weight basis of a pharmaceutically acceptable magnesium stearate.

37. Process according to claim 34, wherein the blended composition used in step (a) is selected from the compositions of claims 1 to 14.

38. The process according to any one of claims 34 to 37, in which the DPP-IV inhibitor is selected from 1-{2-[(5-cyanopyridin-2-yl) amino] ethylamino} acetyl-2 (S)- cyano-pyrrolidine dihydrochloride, (S)-1-[(3-hydroxy-1-adamantyl)amino]acetyl-2-cyano-pyrrolidine, L-threo-isoleucyl thiazolidine, MK-0431, GSK23A, BMS-477118, 3-(aminomethyl)-2-isobuthyl-1-oxo-4-phenyl-1,2-dihydro-6-isoquinolinecarboxamide and 2-[[3-(aminomethyl)-2-isobuthyl-4-phenyl-1-oxo-1,2-dihydro-6-isoquinolyl]oxy}acetamide and optionally in any case pharmaceutical salts thereof.

39. The process according to any one of claims 34 to 37, in which the which the DPP-IV inhibitor is 1-[3-hydroxy-adamant-1-ylamino)-acetyl]-pyrrolidine-2(S)-carbonitrile or pharmaceutical salts thereof.

40. A pharmaceutical composition comprising;

- (a) a DPP-IV inhibitor in free form or in acid addition salt form,
- (b) a pharmaceutically acceptable diluent,

wherein in the unit dosage form, the weight of DPP-IV inhibitor on a dry weight basis to tablet weight of diluent ratio is of 0.5 to 0.25, preferably 0.4 to 0.28.

41. A composition according to claim 40 wherein the diluent is selected from a microcrystalline cellulose and lactose.
42. A composition according to claim 40 or claim 41, wherein at least one diluent is a microcrystalline cellulose and wherein in the unit dosage form, the weight of DPP-IV inhibitor on a dry weight basis to tablet weight of microcrystalline cellulose ratio is of 2 to 0.333, preferably 1 to 0.333, most preferably of 0.7 to 0.333.
43. A composition according to claim 42 or claim 40 comprising lactose as diluent in addition to a microcrystalline cellulose.
44. Composition according to any of claims 40 to 43 wherein the DPP-IV inhibitor is selected from 1-{2-[(5-cyanopyridin-2-yl) amino] ethylamino} acetyl-2 (S)- cyano-pyrrolidine dihydrochloride, (S)-1-[(3-hydroxy-1-adamantyl)amino]acetyl-2-cyano-pyrrolidine, L-threo-isoleucyl thiazolidine, MK-0431, GSK23A, BMS-477118, 3-(aminomethyl)-2-isobuthyl-1-oxo-4-phenyl-1,2-dihydro-6-isoquinolinecarboxamide and 2-{[3-(aminomethyl)-2-isobuthyl-4-phenyl-1-oxo-1,2-dihydro-6-isoquinolyl]oxy}acetamide and optionally in any case pharmaceutical salts thereof.
45. Composition according to any of claims 40 to 43 wherein the DPP-IV inhibitor is 1-[3-hydroxy-adamant-1-ylamino)-acetyl]-pyrrolidine-2(S)-carbonitrile or pharmaceutical salts thereof.
46. Composition according to any of claims 1 to 33 or 40 to 45, comprising between 20 and 120 mg preferably between 25 and 100 mg of 1-[3-hydroxy-adamant-1-ylamino)-acetyl]-pyrrolidine-2(S)-carbonitrile or a pharmaceutically acceptable acid addition salt thereof.
47. Composition according to any of claims 40 to 46, which further comprises;
- (c) 0-20% by weight on a dry weight basis of a pharmaceutically acceptable disintegrant;
 - (d) 0.1-10% by weight on a dry weight basis of a pharmaceutically acceptable lubricant.
48. Composition according to any of claims 40 to 47, which further comprises;
- (c) 1-6% by weight on a dry weight basis of a pharmaceutically acceptable disintegrant;
 - (d) 0.25-6% by weight on a dry weight basis of a pharmaceutically acceptable lubricant.

49. Composition according to any of claims 40 to 48, which further comprises;
- (c) 1-4% by weight on a dry weight basis of a pharmaceutically acceptable sodium starch glycolate; and
- (d) 0.5-4% by weight on a dry weight basis of magnesium stearate.
50. A compressed pharmaceutical tablet according to any one of claims 15 to 29 comprising a composition of claims 40 to 49.
52. The Composition according to any of claims 40 to 48 which is a tablet.
53. The composition according to any of claims 40 to 48 which is a capsule.
54. A compressed pharmaceutical tablet, preferably a direct compressed tablet, comprising a DPP-IV inhibitor, in free form or in acid addition salt form.
55. A compressed pharmaceutical tablet according to claim 54, wherein the DPP-IV inhibitor is selected from 1-{2-[(5-cyanopyridin-2-yl) amino] ethylamino} acetyl-2 (S)- cyano-pyrrolidine dihydrochloride, (S)-1-[(3-hydroxy-1-adamantyl)amino]acetyl-2-cyano-pyrrolidine, L-threo-isoleucyl thiazolidine, MK-0431, GSK23A, BMS-477118, 3-(aminomethyl)-2-isobutyl-1-oxo-4-phenyl-1,2-dihydro-6-isoquinolinecarboxamide and 2-{[3-(aminomethyl)-2-isobutyl-4-phenyl-1-oxo-1,2-dihydro-6-isoquinolyl]oxy}acetamide and optionally in any case pharmaceutical salts thereof.